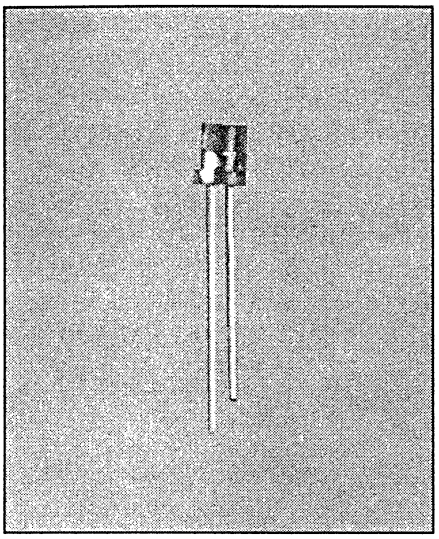
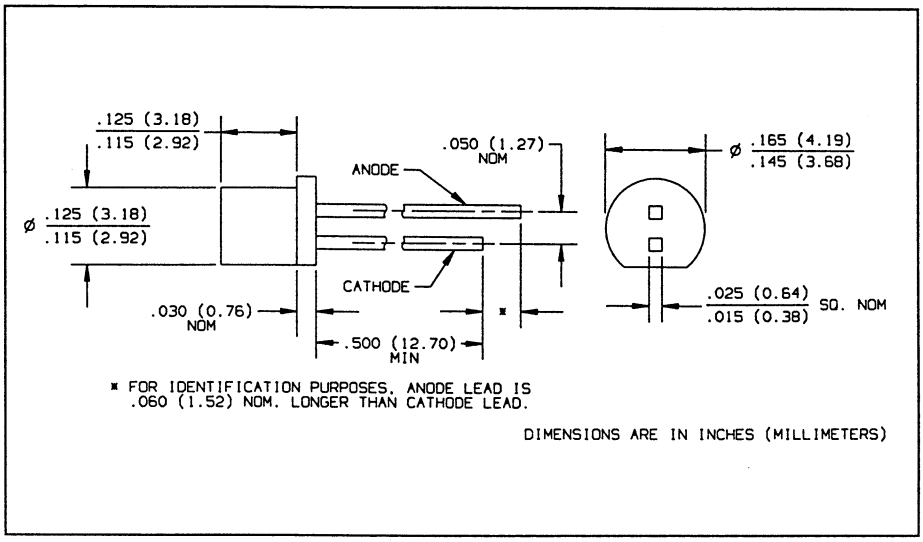
GaAs Plastic Infrared Emitting Diode
Type OP165W





Features

- Wide irradiance pattern
- Mechanically and spectrally matched to the OP505W
- Small package size for space limited applications
- T-1 package style

Description

The OP165W is a 935nm high intensity gallium arsenide infrared emitting diode molded in an IR transmissive amber tinted epoxy package. The broad irradiance pattern provides relatively even illumination over a large area. This package is a T-1 style in all respects except for the length of the plastic package.

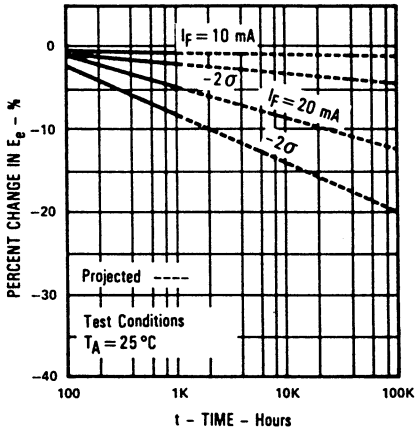
Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Reverse Voltage	2.0 V
Continuous Forward Current	50 mA
Peak Forward Current (1 µs pulse width, 300 pps)	3.0 A
Storage and Operating Temperature Range	-40° C to +100° C
Lead Soldering Temperature [1/16 inch (1.6mm) from case for 5 sec. with soldering iron]	260° C(1)
Power Dissipation	100 mW(2)

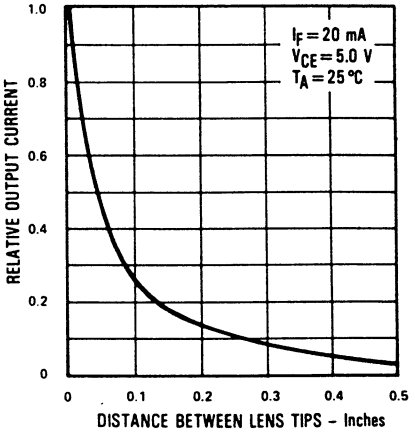
Notes:
(1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. A max. of 20 grams force may be applied to the leads when soldering.
(2) Derate linearly 1.33 mW/° C above 25° C.

Typical Performance Curves

Percent Changes in Power Output vs Time



Coupling Characteristics of OP165W and OP505W



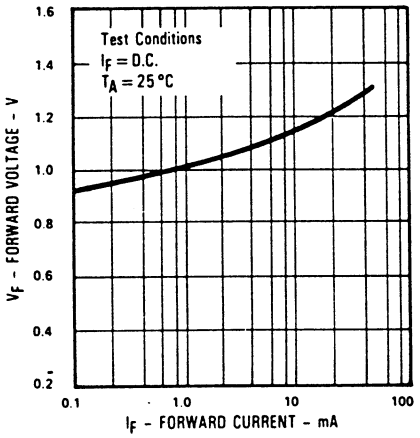
Type OP165W

Electrical Characteristics (T_A = 25°C unless otherwise noted)

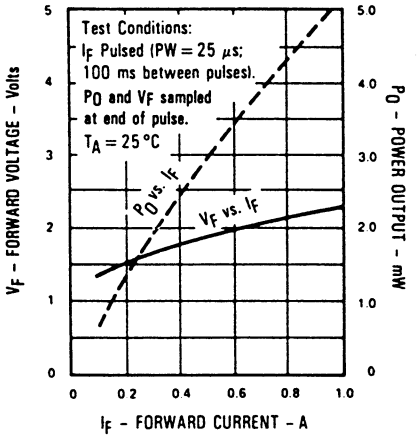
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
P_O	Radiant Power Output	0.50			mW	I_F = 20 mA
V_F	Forward Voltage			1.60	V	I_F = 20 mA
I_R	Reverse Current			100	µA	V_R = 2.0 V
λp	Wavelength at Peak Emission		935		nm	I_F = 10 mA
B	Spectral Bandwidth Between Half Power Points		50		nm	I_F = 10 mA
Δλp/ΔT	Spectral Shift with Temperature		+0.30		nm/°C	I_F = Constant
θ_{HP}	Emission Angle at Half Power Points		90		Deg.	I_F = 20 mA
t_r	Output Rise Time		1000		ns	$I_{F(PK)}$ = 100 mA, PW = 10 µs, D.C. = 10.0%
t_f	Output Fall Time		500		ns	

Typical Performance Curves

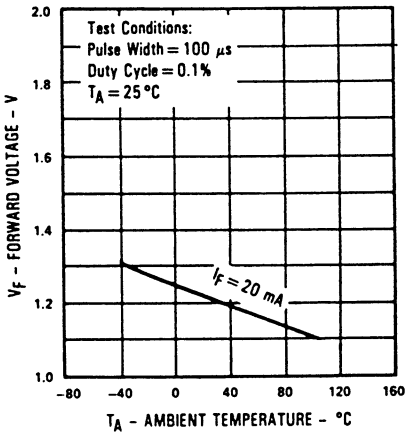
Forward Voltage vs Forward Current



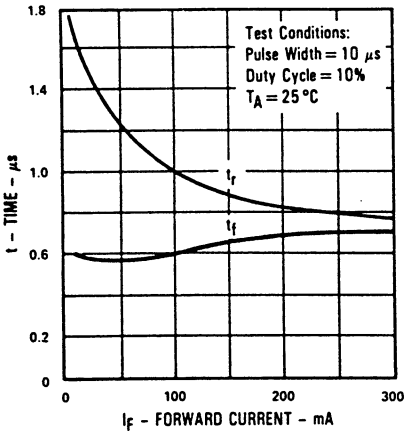
Forward Voltage and Power Output vs Forward Current



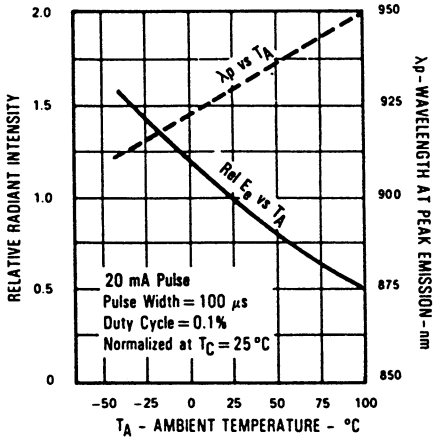
Forward Voltage vs Ambient Temperature



Rise Time and Fall Time vs Forward Current



Normalized Power Output and Wavelength at Peak Emission vs Ambient Temperature



Relative Radiant Intensity vs Angular Displacement